

TRAFFIC CONTROL DEVICE SELECTION PROCEDURE

Step 1 - **Minimum Highway-Rail Grade Crossing Criteria:** (see report for full description)

- A. Gather preliminary crossing data:
 - 1. Highway:
 - a. Geometric (number of approach lanes, alignment, median);
 - b. AADT;
 - c. Speed (posted limit or operating);
 - d. Functional classification;
 - e. Desired level of service;
 - f. Proximity of other intersections (note active device interconnection); and
 - g. Availability and proximity of alternate routes and/or crossings.
 - 2. Railroad:
 - a. Number of tracks (type: FRA classification, mainline, siding, spur);
 - b. Number of trains (passenger, freight, other);
 - c. Maximum train speed and variability;
 - d. Proximity of rail yards, stations and terminals; and
 - e. Crossing signal control circuitry.
 - 3. Traffic Control Device:
 - a. Passive or active;
 - b. Advance;
 - c. At crossing; or
 - d. Supplemental.
 - 4. Prior collision history
- B. Based on one or more of the above, determine whether any of the recommended thresholds for closure, installing active devices (if passive), or separation have been met based on highway or rail system operational requirements;
- C. Consider crossing closure or consolidation:
 - 1. If acceptable alternate route(s) is/are available; or
 - 2. If an adjacent crossing is improved, can this crossing be closed? or
 - 3. If this crossing is improved, can an adjacent crossing be closed?
- D. For all crossings, evaluate stopping and clearing sight distances. If the conditions are inadequate for the existing control device, correct or compensate for the condition (see Step 3 below).
- E. If a passive crossing, evaluate corner sight distance. If less than the required for the posted or legal approach speed, correct or compensate for the condition (see Step 3 below).

Step 2 - Evaluate Highway Traffic Flow Characteristics:

- A. Consider the required motorist response to the existing (or proposed) type of traffic control device. At passive crossings, determine the degree to which traffic may need to slow or stop based on evaluation of available corner sight distances.
- B. Determine whether the existing (or proposed) type of traffic control device and railroad operations will allow highway traffic to perform at an acceptable level of service for the functional classification of the highway.

Step 3 - Possible Revision to the Highway-Rail Grade Crossing:

- A. If there is inadequate sight distance related to the type of control device, consider measures such as:
 - 1. Try to correct the sight distance limitation;
 - 2. If stopping sight distance is less than “ideal” for the posted or operating vehicle approach speed and cannot be corrected, determine the safe approach speed and consider either posting an advisory speed plate at the advance warning sign or reduce the regulatory speed limit on the approach;
 - 3. If corner sight distance is inadequate and cannot be corrected, determine the safe approach speed and consider posting an advisory speed plate at the advance warning sign, or reduce the regulatory speed limit on the approach, or install STOP or YIELD signs at the crossing;
 - 4. If clearing sight distance is inadequate, upgrade a passive or flashing-light only traffic control device to active with gates, or close (consolidate) the crossing, or grade separate;
- B. If highway and/or train volumes and/or speeds will not allow the highway to perform at an acceptable level of service, consider traffic control device upgrade to active (possibly with additional devices such as gates and medians), or closure (consolidation) or separation;
- C. If crossing closure or consolidation is being considered, determine the feasibility and cost of providing of an acceptable alternate route and compare this to the feasibility and cost of improving the existing crossing;
- D. If grade separation is being considered:
 - 1. Economic analysis should consider fully allocated life-cycle costs;
 - 2. Consider highway classification and level of service;
 - 3. Consider the possibility of closing one or more adjacent grade crossings.

Step 4 - Interim Measures And/or Documentation:

- A. If the above analysis indicates a change or improvement in the crossing or type of traffic control devices is indicated, determine what if any

interim measures can or should be taken until such time as recommended improvement can be implemented;

- B. If the above analysis indicates a change or improvement in the crossing or type of traffic control devices is indicated, but there are other compelling reasons or circumstances for not implementing them, document the reasons and circumstances for your decision;
- C. If the above analysis indicates no change or improvement in the crossing or type of traffic control devices is indicated, document the fact that the crossing was evaluated and determined to be adequate.